



Reclamation Research Unit

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Date: July 13, 2005

To: Sue Sillick

From: Stuart Jennings

Re: Progress Report 8. *Evaluation of Organic Matter Addition and Incorporation on Steep Cut slopes, Phase II: Test Plot Construction and Performance Monitoring*

The eighth progress report of Phase II of the above referenced project is attached. The narrative describes work occurring between April 1, 2005 and June 30, 2005. Monitoring of research plots at sites near Miles City and Happys Inn occurred during the past quarter.

Quarterly Progress Report #8
For the period April 1, 2005 – June 30, 2005

**EVALUATION OF ORGANIC MATTER ADDITION
AND INCORPORATION ON STEEP CUT SLOPES**

***Phase II: Test Plot Construction and
Performance Monitoring***

Prepared For:

Montana Department of Transportation
P.O. Box 201001
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Prepared By:

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July 2005

Task Analysis and Discussion

Monitoring of field sites near Miles City and Happys Inn occurred during the past quarter. Expenditures incurred are attributable to progress report writing, communications, travel to research sites and collection of vegetation and erosion data. Strong vegetation growth was



Figure 1Happys Inn glacial silt site



Figure 2 Happys Inn alluvial rock site



Figure 3 Miles City I-94 Ramp site



Figure 4 Miles City US 12 site

exhibited on all compost treatments (Figures 1-4). Limited vegetation development occurred on the control plots without compost. The Happys Inn research sites are dominated by the seeded species. The Miles City research sites exhibit a mixed vegetation community including both weedy and seeded species. The greater abundance of undesirable species at the Miles City site is potentially attributable to drought conditions observed during the first growing season (2004). Both Happys Inn and Miles City treatments are currently in their second growing season. The

Happys Inn site experienced adequate to favorable precipitation during the first growing season, while the Miles City site experienced drought conditions during 2004. It is notable that Miles City received nearly double the typical precipitation amount for June during 2005. Preliminary data suggest Miles City received 4.75 inches of precipitation during June while the long-term average is 2.42 inches. Successful revegetation using compost has now been demonstrated on 4 different parent materials on all compost treated plots under two dissimilar climatic regimes. The degree to which the treatments differ from each other and from the control plot will be statistically demonstrated at the end of the research project when all data is summarized, however profound differences in vegetation response and erosion control between the compost treated plots and controls without added organic amendment are readily apparent.

Task J - Year 1 Monitoring--2004

This task has been completed.

Task K - Year 2 Monitoring--2005

This task is 50% complete. Spring monitoring occurred at both the Happys Inn and Miles City research sites during the second quarter. Fall monitoring is planned for the third quarter of 2005.

Task L - Year 3 Monitoring--2006

This task has not been initiated.

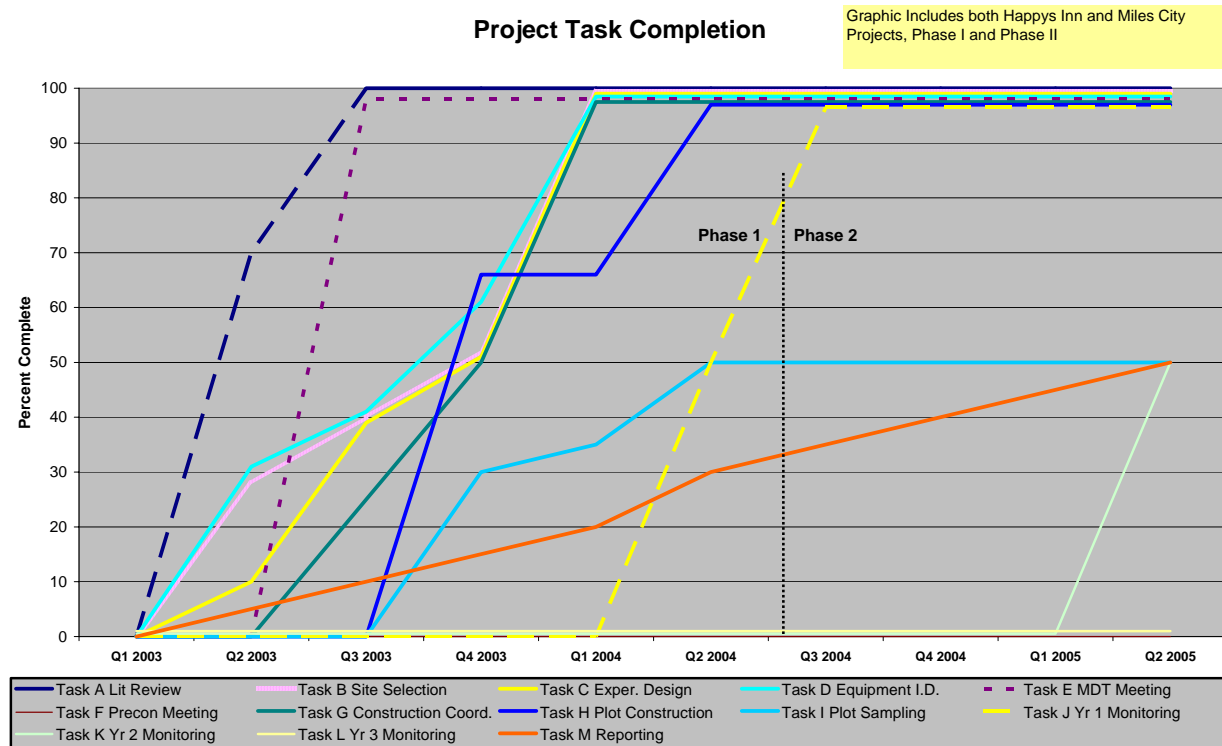
Task M - Reporting

This eight quarterly report satisfies the periodic reporting requirement of the contract. A Final Report will also be completed in 2006 summarizing the research findings.

Schedule and Degree of Completion—all research sites

<i>Task Description</i>	<i>Budgeted Total Phase II</i>	<i>Proposed Schedule</i>	<i>Actual Schedule</i>	<i>Degree of Completion</i>	<i>Estimated Expenditure during current quarter</i>
Task B Site Reconnaissance	\$678	Q3, 2003	Q3 2003, and Q1 2004	100%	0
Task C Experimental Design	\$407	Q4, 2003	Q4 2003, and Q1 2004	100%	0

Task G Construction Schedule Coordination	\$377	Q3, 2003	Q1, 2004	100%	0
Task H Plot Construction	\$36,087	Q4, 2003	Q4, 2003	100%	0
Task I Site Sampling	\$8761	Q4, 2003 and Q3 2005	Q4, 2003	50%	0
Task J Year 1 Monitoring	\$13,083	Spring and Fall, 2004	NA	100%	0
Task K Year 2 Monitoring	\$15,912	Spring and Fall, 2005	NA	50%	\$2537
Task L Year 3 Monitoring	\$16,065	Spring and Fall, 2006	NA	0%	0
Task M Reporting	\$16,380	Quarterly and Final Report, Fall 2006	ongoing	45%	\$1000



Problems and Resolution

No problems were encountered during the current quarter.

Accomplishments

Robust establishment of vegetation on the treated plots at Miles City occurred during the second quarter of 2005 in response to favorable growing conditions and the soil treatment.

Fiscal Expenditure

Amount Spent by budget category:

<i>Cost Category</i>	<i>Spent prior to current quarter (\$)</i>	<i>Spent during the current quarter (\$)</i>	<i>Total spent to date (\$)</i>
Labor and Benefits	\$36,003	\$2591	\$38,594
Operational Expenses	\$5636	\$769	\$6405
Subcontracted Services	\$16,764	0	\$16,764
Indirect Charges	\$11,260	\$177	\$11,437
<i>Total Spent</i>	<i>\$69,663</i>	<i>\$3537</i>	<i>\$73,200</i>

Total Project Award \$108,975

Amount Remaining \$35,775